UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/362,058	07/28/1999	MASANORI IWASAKI	P99.0922	6363

26263 7590 02/10/2005

SONNENSCHEIN NATH & ROSENTHAL LLP
P.O. BOX 061080
WACKER DRIVE STATION, SEARS TOWER
CHICAGO, IL 60606-1080

EXAMINER	
LEE, RICHARD J	

ART UNIT	PAPER NUMBER
2613	

DATE MAILED: 02/10/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/362,058	IWASAKI, MASANORI	
	Examiner	Art Unit	
	Richard Lee	2613	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *08 November 2004*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1,2,5 and 6* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1,2,5 and 6* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

1. The request filed on November 8, 2004 for a Request for Continued Examination (RCE) is acceptable and a RCE has been established. An action on the RCE follows.

2. The applicant's arguments from the amendment filed November 8, 2004 are noted and considered, but are deemed moot in view of the following new grounds of rejections.

3. The applicant is informed that due to compact prosecution and time constraints, a full English translation of the newly applied Japanese reference JP 60037520 (see paragraph (8) below) by Kobu et al can not be obtained at the present time. Since Figure 7 of Kobu et al seems pertinent to the claimed invention, a partially translation by a Japanese translator of the Office was however performed. The Japanese translator identified elements 25-32 of Figure 7 of Kobu et al as follows: element 25 as an object; elements 26 and 27 as image forming lenses; elements 28-30 as mirrors; element 31 as an image pickup tube; and element 32 as a light shielding plate. The Examiner will assume that the English translation for Figure 7 of Kobu et al provided by the Japanese translator of the Office is accurate and official, and as such will be used for art rejection purposes unless otherwise proven. It is further noted that the Abstract for the Japanese reference was machine translated into English. A copy of the Japanese reference with the English translated abstract is attached.

4. The following is a quotation of the first paragraph of 35 U.S.C. 112:

> The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

5. Claims 1, 2, 5, and 6 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

The particular feature of "a lens provided to be closer to said single solid-state image-sensing device than said imaging-side reflection means" as claimed in claims 1 and 2, respectively, is not supported by the Specification. As best understood by the Examiner with reference to Figure 1 of the drawings, for example, elements 3a and 3b are considered the lens, elements 5a and 5b are considered the imaging side reflection means, elements 6a and 6b are considered the subject-side reflection means, and element 1 is considered the single solid-state image-sensing as claimed. It is clear from Figure 1 that lens 3a and 3b are not closer to the single solid-state image-sensing device 1 than the imaging-side reflection means 5a, 5b, as claimed.

6. Claims 1, 2, 5, and 6 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

For examples:

(1) claim 1, line 21, "the reflection means" shows multiple antecedent basis (see lines 8 and 10); and

(2) claim 2, line 20, "the reflection means" shows multiple antecedent basis (see lines 9 and 11).

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

8. Claims 1, 2, and 5 are rejected under 35 U.S.C. 103(a) as being unpatentable over Moreton et al of record (5,835,133) in view of Ishihara et al of record (5,737,084) and Kobu et al (JP-60037520).

Moreton et al discloses an optical system for single camera stereo video as shown in Figures 2A, 2B, and 6, and substantially the same three dimensional image capturing apparatus and stereo camera recording/reproducing system (see columns 5-6) as claimed in claims 1, 2, and 5, comprising substantially the same single solid state image sensing device (i.e., 50 of Figure 2A and see column 6, lines 36-62) having a plurality of image capturing regions (i.e., 50a, 50b of Figure 2A), each image capturing region simultaneously captures a different image on the single solid state image sensing device (see column 6, lines 36-62); a plurality of optical systems (see 30a, 30b, 35, 40a, 40b, 45, 110, 210 of Figure 2A) for forming a different image of a subject in each image capturing region, each one of the optical systems corresponding to a different one of the image capturing regions (see column 6, lines 36-62), each optical system having an image side reflection means (i.e., 35 of Figure 2A) located in front of the corresponding image capturing region and directed in an obliquely outward direction; a subject side reflection means (i.e., 30a, 30b of Figure 2A) located outward from the image side reflection means and directed in an obliquely inward direction; a lens (i.e., 45 of Figure 2A; (10a, 10b of Figure1); wherein the optical systems are used to form, in the corresponding image capturing regions, separate and

different images of the subject which are captured from different viewpoints having a distance therebetween (see columns 5-6); and a signal processing means for dividing a video signal from the single solid state image sensing device into video signals representing the different images of the subject captured in the image capturing regions for capturing images of the subject from the different viewpoints (see 50a, 50b of Figure 2A, column 6, lines 36-62, and 70, 72 of Figure 6).

Moreton et al does not particular disclose, though, the followings:

(a) the lens provided to be closer to the single solid state image sensing device than the imaging side reflection means and light limiting means providing in an optical path between the imaging side reflection means and the corresponding image capturing region, the light limiting means preventing incidence of flux of ambient light other than from rays forming each image of the subject as claimed in claims 1 and 2; and

(b) light shielding means provided normal to the single solid state image sensing device and at least between the single solid state image sensing device and the reflection means so as to prevent optical cross talk between the optical systems as claimed in claims 1 and 2.

Regarding (a), it is noted that Moreton et al does teach the particular use of a diaphragm structure (i.e., light limiting means) as shown in Figure 1 that is used to allow light 5a, 5b to pass through slits 4a, 4b, so that the camera may obtained the desired image rays (see column 1, lines 43-65). Moreton does not particular teach that the light limiting means is provided in an optical path between the imaging side reflection means and the corresponding image capturing region as claimed. However, Ishihara discloses a three dimension shape measuring apparatus as shown in Figures 5 and 8, and teaches the conventional use of light limiting means (i.e., 12 of Figure 5 and see column 8, line 54 to column 9, line 4) provided in an optical path between the imaging side

reflection means (i.e., 21 of Figure 5) and the corresponding image capturing region (i.e., 25 of Figure 5), the light limiting means thereby preventing incidence of flux of ambient light other than from rays forming each image of the subject, and a lens (i.e., 23 of Figure 5) provided to be closer to the single solid state image sensing device (i.e., 25 of Figure 5) than the imaging side reflection means (i.e., 21 of Figure 5). Therefore, it would have been obvious to one of ordinary skill in the art, having the Moreton et al and Ishihara references in front of him/her and the general knowledge of lenses systems and light limiting means within three dimensional image capturings, would have had no difficulty in providing a lens to be closer to the solid state image sensing device 50a, 50b than the image side reflection means 35 of Moreton in view of the teaching of Ishihara involving the lens configuration 23 as shown in Figure 5 as well as providing the light limiting means 12 of Ishihara in an optical path between the imaging side reflection means 35 and the corresponding image capturing region 50a, 50b of Moreton et al thereby preventing incidence of flux of ambient light other than from rays forming each image of the subject for the same well known use of optical structures for three dimensional capturing of the desired image rays and reduction of light rays from the subject purposes as claimed.

Regarding (b), Kobu et al discloses a stereoscopic video device as shown in Figure 7, and teaches the conventional use of a light shielding means (i.e., 32 of Figure 7) provided normal to the single solid state image sensing device (i.e., 31 of Figure 7) and at least between the single solid state image sensing device and the reflection means (i.e., 30 of Figure 7) so as to prevent optical cross talk between the optical systems. Therefore, it would have been obvious to one of ordinary skill in the art, having the Moreton et al and Kobu et al references in front of him/her and the general knowledge of the prevention of optical cross talks between optical systems,

would have had no difficulty in providing the light shielding means 32 of Kobu et al normal to the single solid state image sensing device 50a, 50b of Moreton et al and at least between the single solid state image sensing device 50a, 50b and the reflection means 35 of Moreton et al for the same well known shielding of optical images toward certain image capturing regions and prevention of optical cross talk between optical systems purposes as claimed.

9. Claim 6 is rejected under 35 U.S.C.103(a) as being unpatentable over Moreton et al, Ishihara, and Kobu et al as applied to claims 1, 2, and 5 in the above paragraph (8), and further in view of Tabata et al of record (6,177,952).

The combination of Moreton et al, Ishihara, and Kobu et al discloses substantially the same three dimensional image capturing apparatus and stereo camera recording/reproducing system as above, but does not particularly disclose, though, wherein parallax which is the distance between the viewpoints is one centimeter or greater as claimed in claim 6. It is noted that Ishihara does teach the conventional use of diaphragms within the optical path of an imaging sensor (see 12 of Figure 8), and Tabata et al teaches the general stereoscopic imagings involving parallax caused by the images and from stereoscopic imagings (see column 6, lines 25-30, column 20, lines 8-14, and Figures 13A and 13B). And without specific criticality and though silent within Moreton et al, it is submitted that the parallax generated within Moreton et al in view of the teachings of Tabata et al may obviously be one centimeter or greater as claimed. Therefore, it would have been obvious to one of ordinary skill in the art, having the Moreton et al, Ishihara, Kobu et al, and Tabata et al references in front of him/her and the general knowledge of three dimensional imagings, would have had no difficulty recognizing that the images of the subject of Moreton et al results in a parallax effect in view of the parallax teachings of Tabata et

al and that such parallax within Moreton et al may obviously be one centimeter or greater if such features were not already a part of Moreton et al for the same well known three dimensional image capturing purposes as claimed.

10. Any response to this action should be mailed to:

Commissioner of Patents and Trademarks
Washington, D.C. 20231

or faxed to:

(703) 872-9314, (for formal communications intended for entry)

(for informal or draft communications, please label "PROPOSED" or "DRAFT")

Hand-delivered responses should be brought to Crystal Park II, 2121 Crystal Drive, Arlington. VA., Sixth Floor (Receptionist).

11. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Richard Lee whose telephone number is (703) 308-6612. The Examiner can normally be reached on Monday to Friday from 8:00 a.m. to 5:30 p.m, with alternate Fridays off.

Any inquiry of a general nature or relating to the status of this application should be directed to the Group customer service whose telephone number is (703) 306-0377.

RICHARD LEE
PRIMARY EXAMINER

Richard Lee/rl

2/4/05